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ABSTRACT

This paper focuses on decentralized and regionalized health professional education programs (D/R HPEPs) as a means of affecting the health manpower distribution problem. The discussion is intended to serve as background material for the development of a plan to evaluate D/R HPEPs. The ideas and observations presented are drawn from conference proceedings and prepared papers of Health Resources Administration staff and members of the Advisory Group on Evaluation of D/R HPEPs. The first part of the paper deals with descriptive aspects of D/R HPEPs. Four major topics are covered: The D/R HPEP Concept, Types of D/R HPEP's, Goals and Objectives of D/R HPEP's, and D/R HPEP Activities. The latter part of the paper deals with evaluation concerns including reasons for evaluating D/R HPEP's and issues which must be considered in designing an evaluation. (HD)

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DECENTRALIZED HEALTH PROFESSIONAL EDUCATION

Final Report on Evaluation of Decentralized and Regionalized Health Professional Education Programs

December 31, 1975

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EVALUATION OF DECENTRALIZED AND REGIONALIZED HEALTH PROFESSIONAL EDUCATION PROGRAMS

INTRODUCTION

The Federal Government has supported health manpower education and training for many years. Initially, federal support of medical schools primarily took the form of grants for biomedical research. The large research programs enabled medical schools to attract well-qualified faculties and support teaching programs. The "Health Professions Educational Assistance Act" of 1963 (P.L. 88-129) provided for more direct support of teaching functions by authorizing matching grants for the construction of teaching facilities and loans for students of medicine, osteopathic medicine, and dentistry. This legislation was primarily concerned with increasing the number of graduates from the nation's health professions schools. However, the uneven geographic distribution, the rapid decline in the number of primary care practitioners, and the increasing number of foreign medical graduates filling primary care residency positions were recognized as important issues.

After a number of years of this type of support, it has been recognized that simply increasing the number of physicians and other health personnel is not an effective means of solving health manpower distribution problems. In recent years, the

nature of Federal involvement in health manpower education has changed in order to address problems of geographic and specialty distribution more directly. Federal funds are now supporting more specialized programs such as "contingency" loans for students who agree to practice for a number of years in health manpower shortage areas, family practice residency programs, and various decentralized and regionalized health professional education programs.

The rationale for this type of Federal intervention rests on several perceptions which are widely regarded as axiomatic. The first of these is that the current geographic and specialty distribution of health workers is unsatisfactory; that the quality of the nation's health care suffers as a consequence of the current distributional pattern. To improve the situation, more physicians and allied health personnel are needed in urban and rural medically underserved areas, and relatively more emphasis on primary medical care is needed. A second perception is that these distributional problems do not seem to be self-correcting. The existing incentive structure surrounding choice of practice location and specialty or type of practice serves to perpetuate and even to aggravate the problems.

Third, it is believed that focused outside efforts can affect health manpower distribution, and that the problems are sufficiently serious to warrant attention from the Federal Government. And finally, related to the new types of programs now receiving Federal support, it is thought that interventions

at the educational level are likely to be effective in influencing location and specialty decisions.

This paper focuses on one of these specialized types of intervention: decentralized and regionalized health professional education programs (D/R HPEPs). The discussion is intended to serve as background material for the development of a plan to evaluate D/R HPEPs. The ideas and observations presented here are drawn from conference proceedings and prepared papers of Health Resources Administration staff and members of the Advisory Group on Evaluation of D/R HPEPs.*

The first part of the paper deals with descriptive aspects of D/R HPEPs. Topics which are considered include:

- The D/R HPEP Concept
- Types of D/R HPEPs
- Goals and Objectives of D/R HPEPs
- D/R HPEP Activities

The latter part of the paper deals with evaluation concerns including reasons for evaluating D/R HPEPs and issues which must be considered in designing an evaluation.

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*These papers were prepared for a workshop on Evaluation of Decentralized Health Professional Education held Aug. 24-26, 1975.

DESCRIPTION OF DECENTRALIZED/REGIONALIZED HEALTH PROFESSIONAL EDUCATION PROGRAMS

The Concept of Decentralized/Regionalized Health Professional Education

The D/R HPEP concept can be described in terms of three central ideas. Decentralization refers to a relocation of health manpower education activities, especially physician training programs, to medically underserved areas. Decentralized programs are intended to reproduce, in all esential characteristics, programs which are conducted at the medical school or University Health Science Center. It is hoped that the relocation of training programs will induce students to remain in small communities to practice. It is also felt that clinical training at sites remote from the University Health Science Center (UHSC) may more successfully be able to promote a primary care orientation.

Regionalization refers to the coordination of existing local educational programs with other educational programs and with local delivery institutions, and the creation of new programs to meet local needs. In general, though there are exceptions, dentistry, medicine, and pharmacy programs are decentralized, and nursing and allied health programs are regionalized.

It is felt that a regional effort to coordinate health manpower training may improve the capacity of health workers to operate as a team, and may increase the ability of health care providers to meet community needs.

The creation of linkages is an additional aspect of the D/R HPEP concept. Nearly all decentralized and regionalized programs are established and operated through links with local educational and health care delivery institutions. Through these linkages, it is hoped that a long run capacity will be developed to assess the health care and health manpower needs of the community and to plan through education and other programs to meet these needs.

Types of Decentralized/Regionalized Health Professional Education Programs

There are numerous health manpower education programs in existence which embody in varying degrees the D/R HPEP concept described above. Some of these programs were created by federal programs. Some were initiated by medical schools, by local provider groups, or by State agencies. Some of the long-established programs have attained federal support recently. Others continue to operate independently of federal programs.

Three main types of D/R HPEP can be identified. One type is the Area Health Education Centers (AHECs) sponsored by the Bureau of Health Manpower. Under the BHM AHEC program, eleven medical schools have contracted with BHM to develop remote site training programs. To date, there are 29 AHECs associated with these medical schools. Many of these projects emphasize decen-

tralization of physician education. However, BHM AHEC projects are also involved in activities relating to coordination of allied health education programs and creation of linkages with community providers.*

A second type of D/R HPEP, known as Health Services/Education Activities (HS/EAs), is sponsored by the Regional Medical Program. These projects, numbering approximately 85, are independent, community based consortia of providers of health services and providers of education and training. The emphasis of many of these projects is on centralization at the local level of allied health education programs. HS/EAs represent an attempt to bring educational activities closer to practice by coordinating and supplementing the clinical experience of students of member schools. The basic philosophy of the HS/EA projects differs from the BHM AHEC concept in that HS/EAs do not accord a central position to the medical school or UHSC. Some HS/EAs are affiliated with medical schools, but many are not.

Veterans Administration hospitals conduct health professional education programs which focus on creating linkages between education programs and local provider institutions. Through these programs, the VA provides facilities for the clinical training of over 72,000 students a year. Local VA hospitals serve as catalysts for these activities, encouraging maximal use of their facilities. All VA hospitals participating in D/R

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*A detailed description of the activities of the 23 BHM AHECs is currently being prepared by Abt Associates, Cambridge, Mass.

HPEP belong to local consortia which helps to ensure that their efforts relate to conditions and requirements of local areas.

In addition to these three main types of D/R HPEP, a number of other decentralized or regionalized health manpower training programs exist. For example, Michigan State University has developed a medical education program strongly emphasizing primary medical care. In the absence of a university hospital, all clinical training of medical students takes place in community hospitals in surrounding communities. The WAMI program at the University of Washington provides remote area clinical training for medical students in Washington, Alaska, Montana, and Idaho. The Southeast Tennessee Area Health Education Center, funded by a number of sources, is a consortia of educational institutions built on the RMP HS/EA model. This program focuses on allied health manpower training and is affiliated with several large medical schools outside of its region.

Goals and Objectives of Decentralized/Regionalized Health Professional Education Programs

Decentralized and regionalized health professional education programs have been described as programs designed to affect the distribution of health manpower through changes in the educational process involving inter-institutional systems. This description provides a useful framework for stating goals: one major set of goals pertains specifically to the geographic and specialty distribution of health workers, a second is concerned with the educational process, and a third relates to the organization of and interaction among institutional systems.

A statement of D/R HPEP goals, subgoals, and objectives is outlined below. This list represents a consolidation of the views of the Advisory Group on Evaluation of D/R HPEP. It should be kept in mind that while each of the objectives cited applies to at least one D/R HPEP, no single project or program encompasses all of the objectives. As indicated in the discussion of types of D/R HPEPs, there is a wide diversity across programs. The BHM, RMP, and VA programs were intentionally very loosely structured so that individual projects could develop innovative ways to respond to local needs. Thus, projects have established their own priorities and objectives within the framework of a national program. The following list of goals and objectives covers most areas of concern to the various D/R HPEPs.

Goal: Improve the distribution of health manpower resources.

Subgoal: Improve the geographic distribution of health manpower.

Objective: Instill more favorable attitudes toward remote area practice among medical students.

Objective: Induce medical students to practice in medically underserved areas.

Objective: Provide educational activities for medical students in medically underserved areas.

Objective: Provide clinical training for medical students in medically underserved areas.

Objective: Induce established practitioners to practice in medically underserved areas.

Objective: Encourage migration into MUAs.

Objective: Discourage migration out of MUAs.

Objective: Increase the supply of allied health workers in medically underserved areas.

Subgoal: Enrich the local professional environment.

Objective: Establish continuing education programs.

Objective: Establish channels for consultation and referrals between UHSCs and community hospitals.

Objective: Involve interested local practitioners in program activities.

Subgoal: Improve the specialty distribution of health manpower.

Objective: Induce medical students to choose primary care specialties.

Objective: Increase the supply of primary care allied health workers.

Goal: Improve the educational process.

Subgoal: Maintain or improve the quality of education as compared with traditional (central site) education programs.

Objective: Assess local health manpower requirements and determine the appropriate educational response.

Objective: Establish linkages and initiate planning among educational institutions.

Subgoal: Modify organizational arrangements to extend primary care education at all levels.

Objective: Establish educational and clinical training programs in medically underserved areas emphasizing primary care.

Objective: Effect specific changes in the University Health Science Center to:

- Increase awareness of local problems among UHSC faculty and administration.
- Modify admissions policies to recruit more students from rural environments.
- Achieve increased budget allocations to primary care specialties.
- Achieve expanded emphasis and curriculum content on primary care.
- Obtain a long term commitment from the UHSC for continuing support of D/R HPEPs.

Subgoal: Modify education program content to improve and increase health education activity.

Objective: Promote continuing education of health practitioners to update knowledge and upgrade skills.

Objective: Coordinate the education and training activities of all health manpower types.

Objective: Promote the adoption of a health team approach to increase health manpower productivity.

Subgoal: Modify the mix of students entering educational programs.

Subgoal: Increase consumer health education.

Subgoal: Increase the efficiency of the health manpower education process.

Objective: Use underutilized facilities for clinical training.

Objective: Utilize qualified local practitioners to supervise preceptorships.

Goal: Improve cooperative actions among institutional systems.

Subgoal: Establish inter-institutional linkages to foster communications among groups in order to better relate health manpower training to local needs, and in order to build a system network which will promote the longevity of the decentralized or regionalized program.

Objective: Create linkages among educational institutions and between education and provider groups.

Objective: Encourage informed consumer participation in community health affairs.

Activities of Decentralized/Regionalized Health Professional Education Programs

Given the wide diversity which exists in program types and objectives, it follows that the activities undertaken by various D/R HPEPs to achieve their objectives also vary widely. In this discussion, activities are not linked directly to objectives since activities often serve multiple objectives. Rather, several broad types of efforts are identified and examples of particular activities presented. The activities described are representative of the efforts of various D/R HPEP. The list is not intended to be all-inclusive nor is it intended to fully describe any particular decentralized or regionalized program. Each D/R HPEP is characterized by a unique set of activities flowing from project objectives, available resources, and local conditions.*

Most D/R HPEP activities are directly related to education or training programs for health manpower. Efforts range from designing and conducting training programs to coordinating existing programs, to recruiting students and faculty, to planning for future health manpower needs. Programs are concerned with

*As noted previously, a detailed description of the activities of all BHM AHECs is currently being prepared. The activities of each HS/EA in California are described in Program Guide: The California Network of Health Services Manpower Education Consortia, Charles H. White, et. al., California Regional Medical Program, January 1975.

the training of students in many health fields and with the continuing education of established practitioners. Most activities are carried out in conjunction with area education and/or provider institutions. A number of specific activities are detailed below.

Many D/R HPEPs are involved in designing or conducting educational programs for health career students. These programs may train students in medicine, dentistry, nursing, pharmacy, health administration, or allied health professions. They may be undergraduate or graduate level training programs. They may be pilot demonstration projects or on-going programs.

In addition to curricular program activities, most D/R HPEPs are concerned with establishing clinical placements for students in the local area. Clinical training takes place primarily in community hospitals (or in VA hospitals under VA AHEC programs), but also extends to preceptorships for medical students with local physicians. Hospital-based clinical training programs for medical students and graduates may include short term rotations in community hospitals, internships, residencies including family practice residencies, or other types of programs.

A related set of activities involves coordinating and providing assistance to educational programs already in existence. D/R HPEPs work with local schools which train health professionals, and establish linkages between medical schools or UHSCs and local schools. Activities may include curriculum development or

coordination of program offerings for various manpower types in an area. D/R HPEPs may also give guidance to community colleges or comprehensive colleges in developing new allied health training programs.

Recruitment of students to health careers is an important activity of many D/R HPEPs in light of their objectives of providing training and employment opportunities to local residents and especially to minorities and the economically disadvantaged. Recruitment activities seek to increase awareness in the community of health career training opportunities through use of brochures and counseling teams which visit schools. In addition, some programs offer scholarships to needy students.

An important concern of most programs is the provision of continuing education for local health manpower. Program activities may include assessing needs and establishing priorities for the content of continuing education programs, conducting lectures and discussions to keep practitioners abreast of new developments, providing for inservice training, supporting medical audits of health service delivery, or establishing Learning Resources Centers in area hospitals or libraries. Care is taken to conduct these activities in cooperation with local professional societies and an effort is made to draw on the resources of the UHSC where possible.

A wide variety of D/R HPEP activities relates to planning for future health manpower needs. Most programs seek to better relate health manpower training to local health care delivery

needs. In order to accomplish this, programs may conduct a formal "needs assessment" in the community, or may work with local health planning agencies and provider representatives. The basic activities include acquiring and analyzing data and encouraging open communication among local interest groups to identify community needs. Data of interest in the planning process may include current supply of health manpower, projected demand for services and for manpower, an inventory of training programs, and information of manpower utilization, including job performance criteria and barriers to more effective utilization. A planning activity of D/R HPEPs is to translate these data and others into prescriptions for health manpower training programs. Some D/R HPEPs engage in evaluation of their own programs, which further feeds into the planning process.

The activities described above are concerned with the training and education of health personnel. In a separate line of effort, some D/R HPEP activities focus on health care consumers. These activities include consumer health education and self-help instruction, and occasionally diagnostic screening services.

A basic concern of both decentralized and regionalized education programs is the creation of linkages - a network of communication and cooperation among local education, provider, and health planning groups, and between local groups and regional UHSCs. Although a large amount of D/R HPEP effort contributes

to the formation of these inter-institutional links, few activities are designed to develop linkages as such. Rather, the system network evolves as D/R HPEPs work with local colleges, hospitals, and planning boards to improve training programs and health planning.

EVALUATION OF DECENTRALIZED/REGIONALIZED HEALTH PROFESSIONAL EDUCATION PROGRAMS

In Section 1 of this paper, the basic concepts of decentralized and regionalized health professional education programs (D/R HPEPs) are discussed, and the goals, objectives, and activities of the programs are described. In this section, the focus of the discussion is evaluation of D/R HPEPs. At issue is whether or not to undertake a national evaluation of D/R HPEPs at this time; and if so, how to proceed in designing such an evaluation. A consideration of "why evaluate D/R HPEPs?" gives substance to the first issue and focus to the second.

The general reason for conducting a Federally-sponsored national evaluation of D/R HPEPs can be stated simply: to improve Federal decision-making relating to certain health manpower issues. Federal policy is now actively seeking through a number of mechanisms to affect the geographic distribution of health manpower and to increase concern for primary care. The Federal Government's support of D/R HPEPs may be viewed as a form of social experiment intended to accomplish these goals.

Although the scope of Federal involvement in D/R HPEPs is small in the context of Federal monies spent on health, or even on health manpower training, it is important to assess the performance of these programs at this time for several reasons. Decisions must be made regarding renewal of grants or contracts supporting current programs. Because the programs are relatively

new, there is no accumulated evidence on their performance. Even knowledge of descriptive characteristics of the programs is limited. Furthermore, the strategy is innovative. The effectiveness of intervening in the educational process to influence location and specialty decisions is unknown. In fact, numerous reservations about this strategy have been expressed in view of the large number of variables which affect these decisions. At this point, it is not clear how well conceived the strategy is or how severe the barriers are to effective implementation.

Decisions must be made not only on the appropriate level of support for currently-sponsored projects, but also on whether or not to expand these and similar programs. Federally-funded AHECs and HS/EAs were not explicitly established as demonstration projects to lay the groundwork for a large-scale national program. However, if they appear to be a productive and efficient strategy for achieving national goals, there is reason to consider expanding Federal and other support. A current evaluation of D/R HPEPs is essential to the consideration of whether or not additional AHECs or HS/EAs should be funded, and if so, where and with what provisions.

A second reason to evaluate D/R HPEPs is to improve local-level decision-making regarding resource allocation and operation of specific projects. In some cases, particularly in BHM AHECs, a continuing evaluation effort is built into the structure of

the project. However, all projects, whether or not they conduct self-evaluations, might benefit from a broader evaluation which would provide information on "best practices" or most effective approaches in various settings. Thus, the response to "why evaluate?" is straightforward: to provide information to Federal and local policymakers on the performance and impact of these new, innovative programs.

The issue of whether or not to undertake a national evaluation at this time is clearly too simply drawn. A range of options exists from conducting no evaluation through increasingly more comprehensive, and consequently more costly and time-consuming, evaluation efforts. The decision to be made is one of desired and feasible scope of evaluation.

This decision will ultimately be made by the Federal sponsor of the evaluation, in light of existing constraints relating to time, budget, and availability of data. The anticipated benefits of the information purchased, to the sponsoring agency and to other interested parties, must be weighed against the estimated costs. As input into this decision, the present discussion examines alternatives related to the evaluation design and considers certain problems which will be encountered in evaluating D/R HPEPs. These problems relate to the availability of data, the length of time D/R HPEPs have been in operation, the diversity of project characteristics and settings, and measurement and attribution of program outputs and impacts.

Any limitations on the scope of the evaluation which might derive from time or budget constraints faced by the sponsoring agency are ignored at this stage. Specific topics which are considered, include:

- Objectives of the Evaluation
  - -- For whom is the evaluation to be conducted and what are their policy concerns?
  - -- What broad policy concerns are generated by D/R HPEPs?
  - -- What types of evaluation might be conducted?
- Targets of the Evaluation
  - -- What programs are to be studied?
  - -- What particular projects or sites are to be studied?
- Subjects for Evaluation
  - -- What types of information are desired?
  - -- What dimensions of D/R HPEP activity are to be assessed?
  - -- Potential evaluation questions
- Measures
- Problems in Evaluation of D/R HPEPs

Objectives of the Evaluation

It was suggested above that the basic rationale for evaluating D/R HPEPs is to improve certain aspects of Federal and local decision-making. To translate this general concern into directives for an evaluation design, it is necessary to identify decision-making groups interested in D/R HPEP performance and

impact and their policy concerns, and to recognize broad policy concerns generated by D/R HPEPs. Corresponding to these policy interests, several basic types of evaluation which might be conducted are described below.

Policymakers and administrators interested in D/R HPEPs include the Congress, the Office of Management and Budget, Federal administrators in the Office of the Secretary of DHEW, in DHEW's Health Resources Administration, and in the Veterans Administration, program coordinators in the Bureau of Health Manpower, the Regional Medical Programs, and the Veterans Administration, and project administrators at the local level. State legislatures and other D/R HPEP funding sources and area education and health planning groups also are likely to be concerned with the performance of D/R HPEPs; however their specific policy concerns will not be considered separately here.

Congress, concerned primarily with the effectiveness of Federal programs in achieving social goals, must make decisions on future authorizing legislation and allocation of funds to Federally-sponsored programs. It will be interested in the achievements of BHM, RMP, and VA D/R HPEPs in relation to national goals.

OMB is charged with assessing overall Federal resource allocation to assure that Federal programs are run effectively and efficiently. Thus, OMB staff will want to know if Federal funds are being used for the intended purposes and if program

achievements are reasonable in light of resources expended. Evaluative information relevant to these concerns includes a comparison of funded activities with program directives and goals, and a comparison of achievements with costs.

Federal administrators at various levels focus attention on allocation of Federal resources for health and on program development. Decisions must be made on whether or not to continue support of BHM, RMP, and VA programs. Related decisions concern how resources should be allocated among these programs and between D/R HPEPs and alternative intervention strategies. For these decisions, policymakers need information on the effectiveness and efficiency of Federally-supported D/R HPEPs and of other Federal programs which may serve the same ends. In order to make decisions related to program development, information is needed on the relative effectiveness of various approaches (e.g., decentralization, regionalization) within the D/R HPEP strategy.

A broader concern of Federal administrators and the Congress which bears on resource allocation decisions is what is the appropriate role of the Federal Government in D/R HPEP development? What difference has Federal support and establishment of a national program made in the development of D/R HPEPs and in the achievement of basic goals? Has the linkage network promoted in Federally-supported decentralized, and regionalized programs made these programs more effective than isolated,

remote site training programs in achieving basic goals? To address these issues requires information on achievements of Federally sponsored D/R HPEPs, non-Federally-sponsored D/R HPEPs, and isolated remote site training programs.

Program coordinators are concerned primarily with program development and management. They need to know how well their programs are doing and what structural and management changes to promote, to improve program performance and increase efficiency. A review of project achievements and of the process--what implementation strategies are most effective--is required for this assessment.

Project administrators are also concerned with program development and management, but on a local project level. Management decisions concerning the appropriate level and mix of staff, appropriate lines of authority, and degree of monitoring are required. Resource allocation decisions for program content must also be made. In order to improve performance, project administrators need information on their project's achievements and the relative effectiveness of various sponsored activities and staff configurations. Information on other projects in similar settings will broaden the local administrator's awareness of ways to improve his project's performance.

"Primary users" of the evaluation must be chosen from these groups, who will participate in defining what is to be

evaluated and what constitutes acceptable evidence. The designation of primary users does not preclude others from using the information acquired. Clearly, policy concerns of the various groups overlap and information produced for one group may be of interest to others. The selection of any primary users, in addition to the one or two most important groups, should be based on benefit-cost considerations, weighing the availability of valid information, and the costs of acquiring additional information (and of contending with additional participants in the definition of evaluation issues and acceptable evidence) against the benefits to the sponsor of the evaluation.

Several broad policy issues can be identified from the concerns described above. First, how effective has the D/R HPEP strategy been in achieving or moving the nation toward specified goals and objectives? How efficient have the programs been? What factors appear to improve or to hinder successful performance? And finally, what appears to be the most appropriate role for Federal support of D/R HPEPs?

The first issues can be addressed through a benefit-cost assessment of D/R HPEPs, focussing on the basic questions: 1) What progress has been made by D/R HPEPs toward achieving goals and objectives related to the geographic and specialty distribution of health manpower, to the education and training process, and to the fostering of inter-institutional systems?; and 2) what is the net cost of D/R HPEP operation?

In assessing benefits, attention should be given to unanticipated program achievements which may or may not contribute to achieving objectives. Benefits to whom? and along what dimensions? must be defined, since these are multi-dimensional programs and there are many parties with vested interests in outcomes.

An assessment of D/R HPEP costs must address questions such as: What are the net costs to the Federal Government of D/R HPEP support? (What other Federal fund allocations are lessened as a result of D/R HPEP?) What is the distributional impact of D/R HPEP support as opposed to alternative program support (NCHS, Family Practice Residency Program, scholarships and loans)? The costs to whom must be specified. (Possibilities include Federal and State governments, local communities, students, society...).

The third concern, identifying possible reasons for program success, is relevant to all policymakers seeking to improve program performance. Due to wide project heterogeneity, this assessment must be conducted with respect to particular components of D/R HPEP activity. Nevertheless, general project characteristics such as organizational structure, management factors, operational age and history of the project, and the receptivity of the local environment to planned changes should be considered as well as specific activities undertaken by projects to achieve objectives.

Concern about the appropriate Federal role in D/R HPEPs encompasses a broad range of issues. Specific questions of interest include: Are there systematic differences in program achievements between Federally-funded programs and programs funded from other sources--differences which can be attributed to source of funds? Does it appear that Federal funds have been necessary for stimulating the development and/or expansion of D/R HPEPs? Are Federal funds being used for intended purposes? Have administrative regulations (e.g., decentralization of DHEW) hindered or facilitated the development of D/R HPEPs? What appears to be the optimal level of Federal funding for D/R HPEPs? The optimal number of projects in each program? The most reasonable time period for Federal support? Most of these issues are quite difficult to assess and will require a large degree of judgment in interpreting information from programs which are Federally supported and those which are not.

From the discussion of potential primary users and policy concerns, five general types of evaluation emerge: a national program evaluation, a comparative evaluation of types of D/R HPEPs, an evaluation of best practices for attaining a certain limited set of objectives, project-level evaluations, and an evaluation of the impact on geographic and specialty distribution of D/R HPEPs and alternative intervention strategies.

A national program evaluation (for instance of BHM AHECs) would entail examining all of the projects in the program, if

possible. The central concern is with the program's contribution to achievement of certain national goals. These goals might be those indicated in 1971-1972 at the outset of the programs, or they might be other goals of current or future interest.

A national comparative analysis of types of D/R HPEPs could entail choosing a sample of projects from each program type of interest and comparing performance and impact by program type. The main parameter of interest in this type of evaluation is variation in organizational structure and philosophy, and the consequent effects on program achievements.

To conduct an evaluation of best practices linked to specific objectives, evaluators would have to prioritize objectives and identify the few of highest priority, choose for evaluation only those projects specifically addressing those objectives, and evaluate alternative approaches for achieving the objectives. Management factors, as well as funded activities, are topics of investigation here.

Project level evaluations would be concerned with the degree to which individual projects are meeting locally-assessed needs and achieving locally-defined objectives. Special attention is to be directed to the historical development of the project and to the political and economic context in which it operates.

The final type of evaluation cited is that of identifying areas which have recently achieved a satisfactory supply and

balance of health manpower types and assessing the relative role of D/R HPEPs in this achievement. This type of evaluation is more complex than those described above in that it is necessary to try to account for the influence of the many factors other than D/R HPEP activities affecting practice location and specialty choice. The general approach to this type of evaluation would entail comparing a large number of selected areas, perhaps 30 sites, located near decentralized or regionalized training programs, with 30 additional sites similar in general characteristics, yet without D/R HPEPs.

As suggested above, the choice of programs and specific project sites to be examined, depends upon the type of evaluation conducted and the objectives of the evaluation, and is a matter for agreement among primary users. Key considerations are likely to be the number of activities of a given type reported to be underway and the potential availability of information. Decentralized and regionalized programs which could be evaluated might include the 29 BHM AHECs, approximately 85 RMP HS/EAs, eight VA AHECs, unsuccessful applicants for BHM contracts and RMP grants, and various other related programs such as WAMI, Tennessee's SETAHEC, WICHE, and others.

In reference to the broad evaluation issues, the benefit-cost assessment described might entail comparisons within or across program type. Evaluation of alternative approaches to particular objectives as mentioned above, would benefit from

wide diversity among program types examined. Finally an evaluation of the effectiveness of Federal funding would necessitate looking at both projects receiving and projects not receiving sizable Federal support.

In terms of the types of evaluation discussed above, a national program evaluation would permit examination of projects from a single program, whereas projects from alternative programs would have to be included for an evaluation of D/R HPEP types. An evaluation of best practices within the D/R HPEP strategy would be most beneficial if it were based on projects drawn from a variety of programs in order to capture substantial variation in organization and management as well as particular activities.

There exist three alternatives for chosing projects to be examined: the universe (all projects in a given program), a random sample of projects from one or more programs, and a sample selected on the basis of specified criteria.

For a complete program evaluation, one would want to assess overall impact by examining the performance of each sponsored project, unless, as is likely with the RMP program, budget constraints and the unavailability of information prohibit such an undertaking. To compare program types, a random sample of projects from each program might be most desirable. In evaluating alternative approaches to particular objectives, one would want to select only those projects working toward the objectives of interest. Depending on the objectives of the evaluation, factors such as the size of a project, the number of

years in operation, the sources of funding, and other characteristics, may be relevant in selecting the sample.

Subjects For Evaluation

In order to clarify the information requirements described above, and to focus attention on particular evaluation issues, in this section data about project performance are classified into four types of information. Subsequently several dimensions of D/R HPEP activity, related to major goals and objectives, are identified. A number of potential evaluation questions in each of these dimensions are then proposed.

Information necessary for evaluation of D/R HPEP performance and impact can be described in terms of the following categories:

- Achievements
- Costs and Source of Funding Support
- Activities
- Characteristics of organizational structure, management, and project setting.

The first two types of information pertain to program or project inputs and outcomes. The second two relate to the process of achieving outputs. Any assessment of the effectiveness of project activities must be accompanied and qualified by consideration of the other (endogenous and exogenous) factors mentioned.

Explicit consideration of time is necessary in determining information to be obtained on both achievements and processes. Different outputs and especially impacts are to be expected in different time frames. In the context of D/R HPEPs, the first one or two years of operation represent a "short-run" period.

Three to four years and 7-10 years of operation might be thought of as intermediate and long-run periods respectively. The entire life span of a project is a more relevant time reference than the length of time it has been part of a particular program. A fully operating project which acquired BHM funding in 1972 should not be compared directly in terms of achievement with a BHM AHEC which was initiated in 1972.

The general classification scheme presented above draws attention to the broad types of information of interest in an evaluation. More specific to the evaluation of DR/HPEPs, there are several dimensions of project activity relating to goals and objectives which might be subjects of evaluation. It will be recalled from the discussion in Section 1 that D/R HPEP goals fall into three broad areas. The programs seek to influence the geographic and specialty distribution of health manpower by effecting changes in the educational process and in the process building inter-institutional linkages. An additional explicit goal of some programs is to create employment and education opportunities for minorities.

These four goals of DR/HPEPs can be regarded as possible dimensions to be evaluated. The dimensions roughly correspond to a time flow, with efforts in building inter-institutional systems supporting efforts to change the educational process, which contribute to changing the geographic and specialty

distribution of health manpower and ultimately improving the availability and quality of care in D/R HPEP areas. All dimensions develop over time, but in terms of a current evaluation, outputs are more likely to have been achieved in the areas of institutional linkages and educational process changes. While impact on geographic and specialty distribution of health manpower may be the primary evaluation concern, this dimension of an evaluation would have to rely more on process than output measures at the present time.

Improvements in the quantity and quality of health care in medically underserved areas are the ultimate goals of D/R HPEPs. However, considering the multitude of factors which influence the availability and quality of care, and considering the relatively small role played by D/R HPEPs in the total health care environment, these dimensions are not considered here explicitly in relation to the evaluation of D/R HPEP performance. It is assumed that desired impacts on the geographic and specialty distribution of health personnel will bring about improvements in health care delivery.

A number of potential evaluation questions linked to these dimensions of D/R HPEPs are set out below. Most of these questions are framed in terms of outputs or impacts, but information on costs and on the process of achieving each objective may also be desired. The particular evaluation questions to be studied

within each dimension will depend in part on the actual amount of activity being conducted. Information from the current study by Abt Associates, Inc. will indicate relevant areas of BHM AHEC activity to be evaluated.

Potential Evaluation Questions

- Institutional System Building
  - Have meaningful linkages been established among UHSCs, local health manpower education institutions, and local treatment facilities?
  - Have meaningful linkages been established between these education and provider institutions and area health planning agencies?
  - Have local providers individually been drawn into D/R HPEP activities?
  - What is the apparent degree of committment of involved medical schools and allied health training schools to the development of the remote site training program they are associated with?
  - Has the project contributed to informed consumer participation in health related affairs?
- Educational Process
  - Has the quality of education of traditional programs been preserved in remote site training programs? Has it improved?
  - How does the content (curriculum, clinical training, relative emphasis) of D/R HPEP training programs differ from traditional programs?

- In what ways or to what extent do changes in training program content and emphasis serve to better relate training programs to local needs?
- What is the impact of D/R HPEPs on the affiliated (if any) UHSC or medical school itself in terms of:
  - -- increased awareness of local problems among UHSC faculty and administrators?
  - -- recruitment and admissions policies?
  - -- allocated budgets for primary care specialty training?
  - -- curriculum content and emphasis related to primary care?
  - -- commitment of UHSC faculty and administrators to continuing operations and development of D/R HPEPs?
- Have meaningful continuing education opportunities been established and utilized by local health manpower?

• Distribution of Health Manpower

- Has the D/R HPEP influenced student attitudes (favorably or unfavorably) toward practice in medically underserved areas (MUAs)?
  - -- what is the independent influence of the D/R HPEP experience apart from predisposition (self-selection bias), on attitudes of students participating in D/R HPEPs?

-- what is the impact, if any, on attitudes of students not participating directly in D/R HPEPs?

-- do attitudes differ toward practicing in MUAs surrounding remote site training programs as opposed to MUAs without near-by training programs?

- Have students participating in D/R HPEPs been induced to remain to practice in the surrounding area? Are these location decisions attributable to D/R HPEP training program content, or to the location of training or to other factors?
- Have established practitioners been induced to migrate to or remain in areas surrounding remote site training programs?

  -- what evidence is there of an improved local professional environment?

- Have medical and allied health students been induced to choose primary care specialties?
- Have established practitioners (physicians and allied health personnel) been induced to spend more time delivering primary care as opposed to specialty care?

• Education and Employment Opportunities of Minorities

- Is there an increased awareness of education and employment opportunities among minority residents in D/R HPEP areas?

- Has the proportion of minority students in health career training programs increased?
- Has the proportion of minorities employed in health careers in all locations increased?

Measures

In the present context of considering many alternative evaluation objectives, primary users, and information requirements, the specific measures to be used and data to be collected cannot be considered in detail. In general, certain accommodations and narrowing of scope may be necessary if desired data are not available. Several other general considerations need to be kept in mind.

There should be agreement among all primary users that the data collected in relation to each evaluation question represent acceptable evidence. This is especially important where phenomena of interest are not directly observable and must be measured by proxy variables.

The quality or effectiveness of D/R HPEP activities is important in choosing measures and determining data to be collected. For instance, the number of linkages means little without knowledge of the degree of institutional committment behind the linkage. The number of continuing education sessions reveals little without knowledge of content, correspondence to need, and participation.

The above references to data requirements and types of information involve five kinds of measures including context, input, process, output and impact measures. Context measures pertain to general characteristics of the programs such as their organizational structure and management characteristics, and to the political, economic, and socio-demographic characteristics of the "host" community.

Inputs refers both to dollars flowing through the project and to physical resource such as faculty, administrators, hospitals, and classrooms. Process measures describe project activities - the ways in which resources are combined in order to achieve objectives. Examples might include the number of Family Practice Residency positions made available by the project or revisions in UHSC curriculum incorporated in remote site training programs.

Output measures describe the results of D/R HPEP activities and are defined in relation to project objectives. Outputs can be defined at different levels of specificity: a sub-objective might be to expose a number of students to a remote site clinical experience, measured by the number of students participating during a given time period in a specific clinical training program. A related objective might be to induce these students to choose a primary care specialty or to choose to practice near the decentralized or regionalized program, measured by the number of students who were influenced to do so by their experience in the D/R HPEP.

While output measures relate to project objectives, impact measures seek to assess the effect of project outputs on goal attainment in the context of a larger environment where factors outside the sphere of the D/R HPEP are operative.

The five kinds of measures described here correspond to the types of information discussed above in the following manner. Achievements are measured in terms of outputs and impacts. Costs are measured in terms of inputs. Efficiency is measured through a comparison of outputs or impacts and inputs. Activities are described, as noted, by process measures. Finally, the additional factors affecting performance, both endogenous and exogenous factors, are measured by context variables.

Measurement problems arise to a greater or lesser extent in all of these categories. Measurement of changes in student attitudes toward practice in medically underserved areas, a sub-objective of D/R HPEPs, is elusive. However, attitude scales have been developed and can be employed to give some indication. Measurement of context variables is perhaps the most problematic. In terms of management factors, it is not evident how charismatic leadership or institutional committment are to be measured. Further, out of the multitude of political, economic and socio-demographic characteristics of the local setting, it is not obvious which characteristics or what aspects are immediately relevant to the performance of D/R HPEPs or how to measure them. Furthermore, the degree of influence of context variables may

fluctuate during the lifetime of the project. Clearly, there are no rules of thumb for characterizing the influence of context variables. As stated at the outset of this section, these and other measurement definitions and problems must be dealt with within the framework of a specific evaluation design.

Problems in Evaluating D/R HPEPs

Several factors in addition to measurement difficulties mentioned above create problems for evaluating D/R HPEPs, factors which on one hand limit the feasibility of evaluating certain aspects of the programs, and which on the other hand place special requirements on the evaluation design. These factors can be described in terms of delayed impacts, data availability and comparability, attribution problems, and project hetergeneity.

Delayed Impacts

Delayed impacts simply refers to the fact that the overall goals of D/R HPEPs are long-run goals which will require a number of years to attain. The training programs can certainly be evaluated now. However, unless the timespan of the evaluation can be extended to cover the relevant time period -- perhaps the next five to eight years -- a current evaluation must focus on evaluating processes and production of intermediate outputs. In this regard, the qualitative dimensions of project measures are especially important. The probability of future "success" depends not only on the existence of various activities, but also on their

appropriateness for meeting local needs (and national goals), and the extent to which they build in a long term capacity for continued efforts.

Data Availability and Comparability

The efforts of Abt Associates, Inc. to describe BHM AHECs have revealed many problems related to the availability and comparability of data from different projects. They observe:*

> The projects with which this evaluation will deal probably vary tremendously with regard to the types of internal information they collect and how they record it. Some projects will be found to have detailed program budgeting and management reporting systems (keyed to activity milestones and budgets); others will have trouble in listing their various program efforts or in generating program cost data at all. In some projects, basic program activity data will be maintained at one central location (sometimes in computerized form); in other projects, this information will be maintained at various remote sites, within individual participating institutions (who may have never previously been asked to report it to anyone). Some projects' periodic reports to sponsoring agencies will provide a useful picture of program operations; in other cases, spending a great deal of time on complex narrative reports can confuse the observer more than it informs him. Finally, there is the problem of project staff turnover since the start of the project. In a project setting where individuals (instead of systems) keep track of information, such turnover (particularly if several top project staff are affected) can cause a serious gap in the record of project activities.

In anticipation of these problems, the evaluation design should incorporate data collection protocols which are flexible enough to obtain the maximum possible amount of desired data. If certain data items are not available, other indicators might be sought. In cases where no data are obtainable or where data reporting systems

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*Paul Grigorieff, "Evaluation Concepts for Decentralized Health Education Programs," Abt Associates, Inc., August 1975, p. 17.

do not permit cross-project comparisons on specific items, certain evaluation questions may have to be omitted from consideration.

Attribution Problems

Given the complexity of the environment in which D/R HPEPs operate, it will be exceedingly difficult to identify impacts of the programs, that is to be able to attribute observed changes to D/R HPEP efforts. Clearly there are many factors, including some outside of the sphere of D/R HPEPs, which influence the geographic distribution and specialty choice of health professions. With so many influencing variables, so few projects and no formal control groups, it is impossible to establish causality with certainty. If suitable control areas can be found for comparison, they may provide the basis for informed judgements regarding the impacts of D/R HPEPs.

A further attribution problem exists in trying to assign responsibility for outputs to specific project components. This problem arises because many of the projects are "open systems," involving different organizations and activities. Thus it is difficult to identify specific institutional or program responsibility for some achievements. Also many activities overlap in purpose, contributing to the achievement of several objectives. This problem is encountered only in the evaluation of processes or best practices for achieving objectives.

Project Heterogeneity

The extensive variation which exists in project description, including objectives, activities, and organizational structure,

poses problems for evaluation design. The interests of policy makers, as described above, encompass both program performance and project performance. However, there is a trade-off between a case study approach, which captures the unique characteristics of individual projects, and a program level evaluation, which generalizes about the performance of all projects taken together.

A program level assessment cannot accommodate all of the variability in characteristics and settings of individual projects which must be ignored or subsumed in broad generalizations. At the same time it is likely that some projects may be evaluated in terms of objectives of national interest which they themselves have accepted, or to which they have assigned low priority. This is perfectly legitimate for a national program evaluation, but is likely to generate little enthusiasm at the project level. Since project cooperation is necessary for a successful program evaluation, this point may have implications for the evaluation design. A reasonable accommodation would be to retain the nationally important objectives as grounds for evaluation but expand the evaluation concerns to include the atypical activities and efforts of various projects. If this method is carried to extreme, the result is a series of case studies where the quantity of information becomes unmanageable and the ability to generalize about program performance is diminished.

Also because the projects and their settings are so heterogeneous, effects of project operations are not predictable. The evaluation design should be flexible enough to capture unanticipated as well as anticipated consequences of D/R HPEPs.

Scope and Level of Effort of the Evaluation

Returning to the initial issue of concern, it can be seen that in light of the broad range of potential policy concerns, targets and subjects for evaluation, different types of evaluation can be conducted and the scope and focus of the evaluation effort (how many and which evaluation questions are addressed) are variable. One option mentioned at the outset is to conduct no formal evaluation. This would be a reasonable course of action if it appeared that evaluation results at any level would be too inconclusive to merit the necessary investment or that time constraints precluded a meaningful evaluation. This option might be combined with a decision to increase efforts to institute a uniform management information system, facilitating future evaluation efforts and creating the capacity for longitudinal analysis of program performance.

A second option would be to conduct a program evaluation of one national program. At least 15 months would be required to design and conduct the evaluation and interpret results, allowing time for current MIS efforts to yield initial results. This type of evaluation is roughly estimated to cost between $300,000 and $400,000.*

As another alternative, the capacity to compare across program types might be added to the program evaluation. The necessity of

*This estimate corresponds to an evaluation of the Bureau of Health Manpower AHEC program. Because of the number of projects and sites involved, program evaluation of RMP HS/EAs and VA AHECs are likely to cost more, and less, than this estimate, respectively.

examining projects from a variety of programs would raise the overall costs to perhaps $400,000 - $500,000 and require a timespan of approximately 18 months.

An in-depth evaluation concerned with identifying "best practices" in achieving a few specified objectives would add approximately $250,000 to $350,000 to overall costs and would also require in total approximately 18 months.

Project level evaluations might perhaps be conducted for $15,000 to $20,000 per project over a period of 12 to 18 months, depending on the number of projects studied.

The evaluation of alternative intervention strategies as described would be a complex undertaking. With the large number of D/R HPEP sites and control sites to be studied, this evaluation effort would most likely require $500,000 to $750,000 and 18 to 24 months.

Finally it is estimated that the combination of a current national program evaluation plus full-scale efforts to operationalize a management information system would cost in the range of $500,000 to $750,000.

CE 004 534